



## Third Technology Field Day Focuses on Ammonia Test

More than 50 people attended the Technology Field Day conducted on September 4 at facilities of the United States Department of Agriculture's Agricultural Research Service in Ames, Iowa, launching the verification test of technologies that can measure gaseous ammonia in ambient air at animal feeding operations.

The event was sponsored by the U.S. Environmental Protection Agency's (EPA) Environmental Technology Verification (ETV) Program, the USDA, and the Advanced Monitoring Systems (AMS) Center, which is managed by Battelle in partnership with EPA. Key speakers were Jean-Mari Peltier, counselor to the U.S. EPA Administrator; Teresa Harten, director of the ETV Program; Dr. Mack Gray, USDA deputy undersecretary for natural resources and environment; and Robert Wright, USDA national program leader for air quality. Jerry Hatfield, director of the USDA's National Soil Tilth Laboratory (NSTL), served as host of the program.

The audience included representatives from universities, federal and state agencies, officials from the area, members of state and national associations with interests in animal feeding operations (abbreviated as AFO) and air monitoring, area environmental groups, pork producers' associations, and area technology buyers and users.

An overview of the two-phase verification test was presented by Kenneth Cowen of Battelle. Phase 1 is currently being conducted at a commercial swine farm outside of Ames. In Phase 2, the technologies will be tested at a near-by commercial beef facility during October. The monitors being tested include both open-path systems and point source monitors. They are continuous monitors and provide real-time or near real-time measurements of ammonia concentration. Seven companies have submitted technologies to be tested:

*(See Ammonia on Page 2)*

Answering questions from the audience at the Technology Field Day were representatives (above, from left) Jerry Hatfield, USDA; Jean-Mari Peltier, EPA; and Mack Gray, USDA. Attendees learned about technologies from participating vendors (middle). EPA and Battelle representatives discussed the verification test process being conducted at an Iowa swine farm (below).



**The AMS Center, which is part of the U.S. Environmental Protection Agency's Environmental Technology Verification Program, verifies the performance of technologies that monitor for contaminants and natural species in air, water, and soil. ETV was established to accelerate the implementation of improved environmental technologies through third-party verification testing and reporting of the technologies' performance. The ETV process provides purchasers and permittees with an independent assessment of the technology they are buying or permitting and facilitates multi-state acceptance. For further information, contact Helen Latham at Battelle, 505 King Ave., Columbus, Ohio 43201-2693; Phone 614-424-4062; Fax 614-424-5601; E-mail [lathamh@battelle.org](mailto:lathamh@battelle.org).**

## Ammonia *(from Page 1)*

Aerodyne, Bruker, Molecular Analytics, Omnisens, Pranalytica, R&R Mechatronics, and Thermo Electron.

The objective of the verification test is to verify the performance of commercially available ammonia monitors under normal operating conditions at two different animal feeding operations. AFOs are the largest source of emissions of atmospheric ammonia (NH<sub>3</sub>) and account for approximately 80% of those emissions in the United States.

Ammonia is highly reactive and can combine with other atmospheric pollutants to form secondary fine particles, a major component of PM<sub>2.5</sub>. EPA and USDA are collaborating in a unified national strategy to minimize the impacts of large concentrations of AFOs.

Battelle is conducting the test in collaboration with EPA, USDA, and vendors of the monitors being verified. Results of the verification test will be posted on the ETV Web site (<http://www.epa.gov/etv>).

## Test Kits for Atrazine Are Next

Four vendors are participating in the verification of test kits that can detect atrazine in water: Abraxis, Silver Lake Research, Strategic Diagnostics, and Beacon Analytical. Atrazine is an herbicide widely applied on a variety of crops, such as corn and sorghum, and for nonagricultural uses. The test is being conducted by Battelle's Advanced Monitoring Systems Center and is to be completed in September.

Atrazine is estimated to be the most heavily used herbicide in the U.S. and the most controversial among scientists, researchers, and activists. Some believe that atrazine can or might cause developmental effects in humans or amphibians.

EPA established a Scientific Advisory Panel, which concluded that, while the herbicide may prevent normal development of amphibians, current scientific evidence is not strong enough to justify further regulatory action.

EPA has developed an aggressive program to protect vulnerable community drinking water systems from atrazine contamination. The program includes intensive and targeted monitoring of raw water entering certain community water systems in areas where atrazine is widely used, an early alert system if water sources have a high level of the herbicide, a rigorous water monitoring program, and other safeguards.

The verification test of the four test kits will determine the analytical and operational performance characteristics, which are typically based on immunoassay methods, where specific antibodies are used to detect and measure the analytes of interest.

Four partner organizations are providing assistance during the test: the National Oceanographic and Atmospheric Administration's National Ocean Service (NOAA/NOS), Texas Commission on Environmental Quality (TCEQ), EPA's Environmental Chemistry Laboratory at the Stennis Space Center (Stennis, MS), and the University of Missouri – Rolla.

The verification test coordinator is Patricia White, 781-952-5279 or [whitepj@battelle.org](mailto:whitepj@battelle.org).



**Technology name: REMOTE**  
**(Real-world Emissions Monitoring**  
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## 51<sup>st</sup> Verification Test Completed

The Real-world Emissions Monitoring On-board Testing Equipment (REMOTE) technology, an on-board vehicle emission monitor (OEM) submitted by Clean Air Technologies of Buffalo, NY, became the 51<sup>st</sup> technology to be verified by the Advanced Monitoring Systems (AMS) Center. The verification statement and report, which contain detailed information is posted on the ETV Web site (<http://www.epa.gov/etv>).

**Note:** *Verification tests underway or completed are no longer listed in each issue of The Monitor because of space limitations. Final verification test reports and statements are posted on the ETV Web site at <http://www.epa.gov/etv>. The AMS Center is located at <http://www.epa.gov/etv/centers/center1.html>.*